DIAMOND RUBBER COMPANY OF NEW YORK *v.* CONSOLIDATED RUBBER TIRE COMPANY.

CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SECOND CIRCUIT.

No. 36. Argued February 28, March 1, 1911.—Decided April 10, 1911.

Where a device possesses such amount of change from the prior art as to receive approval of the Patent Office, it is entitled to the presumption of invention which attaches to a patent.

An inventor is entitled to all that his patent fairly covers, even though its complete capacity is not recited in the specifications and was unknown to the inventor prior to the patent issuing.

The law regards a change as a novelty, and the acceptance and utility of the change as further evidence, even as a demonstration, of novelty.

The rubber carriage tire involved in this case and patented to Grant attained a degree of utility not reached by any prior patent, and, although only a step beyond the prior art, is entitled to be patented as an invention.

Utility of a device may be attested by litigation over it showing and measuring the existence of public demand for its use.

While extensive use of an article beyond that of its rivals may be induced by advertising, where the use becomes practically exclusive a presumption of law will attribute that result to its essential excellence and its superiority over other forms in use.

Elements of a combination may all be old, for in making a combination the inventor has the whole field of mechanics to draw from. *Leeds & Catlin Co.* v. *Victor Talking Machine Co.*, 213 U. S. p. 318.

On the evidence this court finds that the improvement on rubber tires involved in this case possesses the power ascribed to it by the inventor and denied by those using it without authority, and holds that this power was not the result of chance but was achieved by careful study of scientific and mechanical problems necessary to overcome defects in all other existing articles of that class.

In the courts below defendants relied on invalidity of complainant's patent, and did not press the defense of non-infringement, and also conceded that infringement existed in prior litigation, and this court holds that infringement exists.

Quære whether under *Kessler* v. *Eldred*, 206 U. S. 285, the injunction can extend to sale of articles in other circuits in which complainant's patent has been held invalid.

157 Fed. Rep. 677, and 162 Fed. Rep. 892, affirming 147 Fed. Rep. 739, affirmed.

THE facts, which involve the validity of certain letters patent for improvement in rubber tires, are stated in the opinion.

Mr. Charles K. Offield for petitioner.

Mr. Frederick P. Fish, with whom *Mr. C. W. Stapleton* and *Mr. J. L. Stackpole* were on the brief, for respondents.

MR. JUSTICE MCKENNA delivered the opinion of the court.

Writ of certiorari to review a decree of the Circuit Court of Appeals for the Second Circuit sustaining a patent for an improvement in rubber tires issued to Arthur W. Grant, February 18, 1896. The patent, and those which it is contended anticipate it, have received full exposition in the opinion of that court. 157 Fed. Rep. 677, and 162 Fed. Rep. 892, affirming 147 Fed. Rep. 739. It and they were also passed upon and the patent sustained in *Rubber Tire Wheel Co.* v. *Columbia Pneumatic Wagon Wheel Co.*, 91 Fed. Rep. 978, and in *Consolidated Rubber Tire Co.* v. *Finlay Rubber Tire Co.*, 116 Fed. Rep. 629; *Consolidated Rubber Tire Co.* v. *Firestone Tire and Rubber Co.*, 151 Fed. Rep. 237. See also *Rubber Tire Wheel Co.* v. *Milwaukee Rubber Works*, 142 Fed. Rep. 531, 533, and the same case, 154 Fed. Rep. 358, 362. It was held invalid in *Goodyear Tire & Rubber Co. et al.* v. *Rubber Tire Wheel Co.* (C. C. App. Sixth Circuit), 116 Fed. Rep. 363, reversing the Circuit Court, Judge Wing presiding. It was also declared invalid in *Rubber Tire Wheel Co.* v. *Victor Rubber Tire Co.*, 123 Fed. Rep. 85, following 116 Fed. Rep. 363, *supra*.

A further display of the patent and of its alleged anticipating devices would seem to be unnecessary, and that we might immediately take up a review of the divergent decisions. There is a controversy as to whether they are divergent and irreconcilable in fundamental conceptions of the patent as well as in result.

We may say at the outset of this asserted conflict between the cases that the Court of Appeals for the Second Circuit considered that there was no antagonism between its decision and that of the Court of Appeals for the Sixth Circuit. It proceeded, as it in effect said, upon "new facts and features which have been added to or developed from the records in the earlier cases." However, something more is required of us than the reconciliation of other cases, some consideration of the patent and the state of the art prior to it.

The patent was issued to Arthur W. Grant, February 18, 1896, and he declares in the specification he has invented "certain new and useful improvements in rubber tire wheels . . . designed for use on ordinary vehicles, such as wagons, buggies, and carriages, . . . and consist in the construction of parts hereinafter described and set forth in the claim." The claims are as follows:

"1. A vehicle-wheel having a metallic rim with angularly-projecting flanges to form a channel or groove with tapered or inclined sides, a rubber tire, the inner portion of which is adapted to fit in said groove or channel and the outer portion having sides at an angle to the inner portion, the angle or corner between the outer and inner portions being located within the outer periphery of the flanges, and independent retaining-wires passing entirely through the inner portions of said tire and also within the outer peripheries of the flanges, substantially as described.

"2. A vehicle-wheel having a metallic rim with outwardly-projecting flanges at an angle to the plane of said

wheel so as to form a channel or groove having tapered or inclined sides, a rubber tire, the inner portion of which is adapted to fit in said tapered groove or channel, and the outer or exposed portions formed at an angle thereto, the angle or corner between the said portions being placed within the outer periphery of said flanges, openings extending entirely through the unexposed portion of said tire, and independent retaining-wires in said openings, and a reinforcing-strip of fibrous material placed at the bottom of said tire and wholly within said flanges, substantially as specified."

It will be observed that the tire is composed of three elements: First, the channel or groove with tapered or inclined sides; second, the rubber tire adapted to fit into the channel or groove, and shaped as described; third, the fastening device, that is, the independent retaining wires located as indicated.

The shape and relation of the parts are illustrated in the following figures (see p. 432) taken from the patent:

Fig. 1

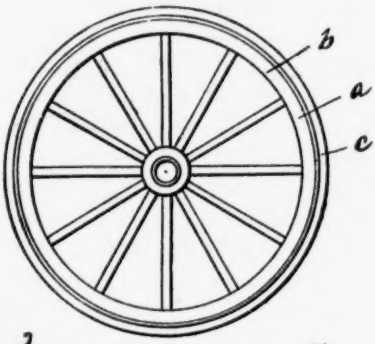


Fig. 2.

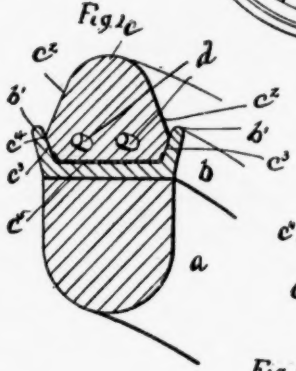


Fig. 4.

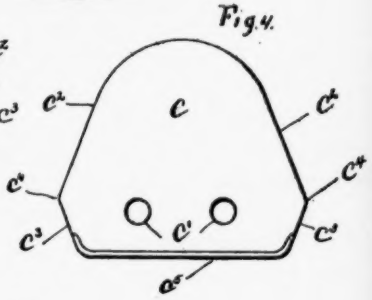
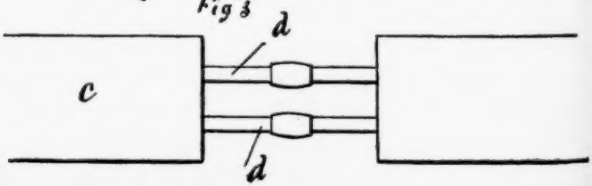


Fig. 3



These figures explain themselves, but we copy the following from the specifications:

"In the accompanying drawings, Fig. 1 is a side elevation of a wheel embodying my invention. Fig. 2 is a sectional elevation of the wheel-rim, shown partly in perspective. Fig. 3 is a partial longitudinal section through the tire, showing the openings for the retaining wires.

Fig. 4 is a transverse sectional view of the rubber tire in detail."

It is conceded that the claims are narrow, counsel saying that they are "limited closely to the specific construction of the Grant tire as it is actually shown and described in the patent." And a right to equivalents is disclaimed. Indeed, a certain merit is made of this as exhibiting at once the simplicity and perfection of the invention and the tribute paid to its excellence by respondent by exactly imitating it, instead of attempting to evade it. It is pointed out that the co-action of the parts is so dependent upon their shape and relation that any alteration destroys their coöperation and the utility of the tire. There is strength in the contention, as we shall presently see.

Anticipating somewhat, we may say that the tire has utility is not disputed; to what its utility is to be attributed is in controversy. The respondents, the Tire Company, contend that the tire is at once firm and mobile in its channel, "creeps" (moves slowly around the edge of the rim), and will yield laterally, and thus the lateral blows against it will be cushioned. It is further contended that if the tire be "tipped from its seat in the channel by a side blow" it "automatically restores itself to normal position when the side pressure is released." In other words, and in the language of one of the expert witnesses, the tire has the capacity to rise and fall and reseat itself under lateral strain, that is, to rise slightly from the rim on one side, independently of the other, when subjected to very great strain, and immediately reseat itself when such strain is removed. "It must be borne in mind," counsel say, "that the Grant tire is not cemented into the channel. This is an essential and important point. Any tire that is cemented in its channel is rigid and cannot 'creep' or yield to lateral blows. It is, therefore, easily and quickly destroyed. The absence of cement in the Grant tire is a vital characteristic." And, further, that Grant,

"by omitting the cement and by permitting the tire to tip, to creep and to move in its channel, obtained a radically new and useful result." And it is insisted that this results because the tire is a new and patentable combination of parts co-acting in the manner of a true combination to produce a new and useful result, and is not an aggregation of old elements or parts each performing its own function and nothing more. These propositions are combated by the Rubber Company, and it is insisted that the testimony is "conclusive and uncontradicted that the Grant tire, clamped to the tire or rim by the straining tension of the two wires," has not the capacity attributed to it, "and never could have." And it is said that "it is manifest that this question can be easily determined as a question of fact," and that the testimony "proves such asserted movement a myth and a fallacy." And, it is urged, that such capacity in the tire is not recited in the specifications of the patent, and was unknown to Grant.

This tipping capacity is made the pivot of the controversy. It was as to that that the Courts of Appeals for the Sixth and Second Circuits disagreed either upon the difference of the testimony in the cases, or more deeply, on principle. The controversy and Grant's alleged ignorance of the tipping characteristic of the tire really present some anomaly. The tire has utility, a utility that has secured an almost universal acceptance and employment of it, as will subsequently appear. It was certainly not an exact repetition of the prior art. It attained an end not attained by anything in the prior art, and has been accepted as the termination of the struggle for a completely successful tire. It possesses such amount of change from the prior art as to have received the approval of the Patent Office, and is entitled to the presumption of invention which attaches to a patent. Its simplicity should not blind us as to its character. Many things,

and the patent law abounds in illustrations, seem obvious after they have been done, and, "in the light of the accomplished result," it is often a matter of wonder how they so long "eluded the search of the discoverer and set at defiance the speculations of inventive genius." *Pearl* v. *Ocean Mills*, 11 Off. Gaz. 2. Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by a merely skillful attention. But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not. It regards a change as evidence of novelty, the acceptance and utility of change as a further evidence, even as demonstration. And it recognizes degrees of change, dividing inventions into primary and secondary, and as they are, one or the other, gives a proportionate dominion to its patent grant. In other words, the invention may be broadly new, subjecting all that comes after it to tribute (*Railway Co.* v. *Sayles*, 97 U. S. 554, 556); it may be the successor, in a sense, of all that went before, a step only in the march of improvement, and limited, therefore, to its precise form and elements, as the patent in suit is conceded to be. In its narrow and humble form it may not excite our wonder as may the broader or pretentious form, but it has as firm a right to protection. Nor does it detract from its merit that it is the result of experiment, and not the instant and perfect product of inventive power. A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world's utilities he is entitled to the rank and protection of an inventor. And how can it take from his merit that he may not know all of the forces which he has brought into operation? It is certainly

not necessary that he understand or be able to state the scientific principles underlying his invention, and it is immaterial whether he can stand a successful examination as to the speculative ideas involved. *Andrew* v. *Crocc*, 8 Fed. Rep. 269; *Eames* v. *Andrews*, 122 U. S. 40, 55; *St. Louis Stamping Co.* v. *Quinby*, 16 Off. Gaz. 135; *Dixon Wood Co.* v. *Pfeifer*, 55 Fed. Rep. 390; *Cleveland Foundry Co.* v. *Detroit Vapor Stove Co.* (C. C. A. Sixth Circuit), 131 Fed. Rep. 853; *Van Epps* v. *United Box Co.* (C. C. A. Second Circuit), 143 Fed. Rep. 869; *Westmoreland Specialty Co.* v. *Hogan* (C. C. A. Third Circuit), 167 Fed. Rep. 327. He must, indeed, make such disclosure and description of his invention that it may be put into practice. In this he must be clear. He must not put forth a puzzle for invention or experiment to solve but the description is sufficient if those skilled in the art can understand it. This satisfies the law, which only requires as a condition of its protection that the world be given something new and that the world be taught how to use it. It is no concern of the world whether the principle upon which the new construction acts be obvious or obscure, so that it inheres in the new construction.

This discussion may be broader than the contention of the Rubber Company requires; indeed, may imply a misunderstanding of it. The contention may only mean that Grant did not discern the manner of the operation of the elements which he combined, and therefore did not really invent any thing, only assembled old elements, changing their relations somewhat and retaining their essential character and effect. We should be slow to infer such ignorance. It is difficult to suppose that the contriver of a successful device did not understand how it operated; that he saw nothing in it and committed it to the world without seeing anything in it, but a composition of wood, rubber and iron in certain relations without understanding or attempting to discover the law and principle of its or-

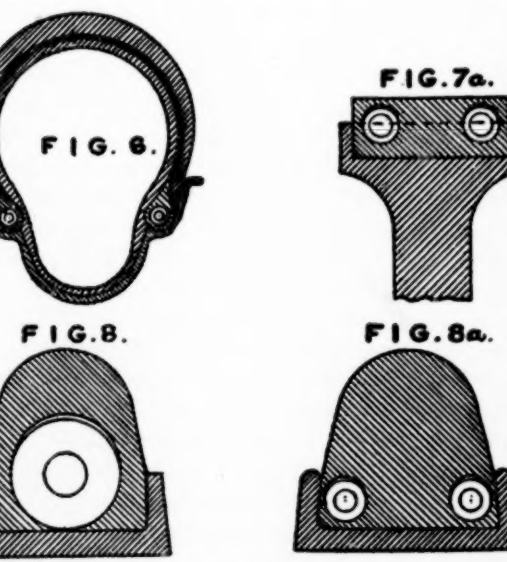
ganization and efficiency. Grant's situation demanded caution and knowledge. He was confronted by what has been termed a "crowded" prior art; he might expect to encounter litigation, and, even before litigation, he would have to satisfy the Patent Office of the novelty and utility of his device, and it is hard to believe that he did not know the coöperating law of the elements which he had combined and only unconsciously made use of it. We find the contention difficult to handle. When a person produces a useful instrument, to say that he did not know what he was about is at least confusing. To take from him the advantage of it upon nice speculation as to whether it was an ignorant guess or confident knowledge and adaptation, might do him great injustice. His success is his title to consideration.

In our decision thus far we have assumed that the Grant tire is an invention, but as that is disputed we must examine its right to such distinction. The Rubber Company denies invention to it, and, considering that its pretension to such quality depends upon the possession of tipping power (including in this reseating power), contests the existence of such power; and, even granting its existence, it is yet contended that anticipation may be demonstrated. In other words, it is insisted that if tipping power exist in the Grant patent it existed in prior patents, and that "the old art was crowded with numerous prototypes and predecessors of this Grant tire, with every thought and suggestion of novelty and utility that can be found in drawings and specifications of the Grant patent, or in the idealized contentions as to the patent by the visions and dreams of the experts and counsel for the patent."

Two patents are selected to sustain the contention, out of what are said to be a large number of United States and foreign patents, with the comment that "if they do not show anticipation none of the others will show it, and if they do anticipate the Grant patent, it is entirely im-

material whether the others do or not." They are bo
English patents issued to Frank Stanley Willoughby. W
copy from the Rubber Company's brief the figures of th
patent 5924.

FIG. 3



The following is the explanation given by counsel of th
figures:

"The drawings of the Willoughby patent of March 2
1892, No. 5,924, as to the flanged channel, show the flange
in three different positions as to the solid rubber tir
Fig. 8 shows the flange at right angles of the rim; Fig. 8

shows the flanges somewhat inwardly inclined with the two retaining wires, and Fig. 7[a] shows the flanges vertical with two retaining wires, the retaining wires in Fig. 8[a] being below the outer periphery of the flanges, and the two retaining wires of Fig. 7[a] being centrally located, as to their openings, with the periphery of the flanges. In Fig. 6, however, which is a pneumatic tire (a tire when highly inflated is as solid as a rubber tire) the flanges are outwardly flaring and the two retaining wires are substantially below the periphery of the flanges."

There are resemblances and differences in the figures to those of the Grant patent and we have let the Rubber Company set forth the resemblances. The differences are substantial. To represent them we cannot do better than to quote the description given of them by Judge Thomas, 91 Fed. Rep. 988, as follows:

"The Willoughby patent, No. 5,924, Fig. 8[a], shows in combination wire connections, also described in the specification, very similar, save in location, to those used by Grant, and the figure shows also a very slight angle located slightly within the flanges. The rim, however, is of the clinger variety; that is, the flanges incline inwardly, and bind the rubber on each side. Such a tire thwarts the lateral play otherwise permitted to the rubber by the wires, and, although almost imperceptible angles appear, made by the sides of the rubber, they are not sufficient to give the immunity resulting from a well-defined angle whose vertex is within the flaring rim. Figures 5[a] and 5[c] show rims shaped like the segment of a circle, in which are seated spherical rubbers held in place by a single wire. The rim is described in the specifications as U or V-shaped. A V-shaped rim must have flaring flanges, but the rim is quite unlike that employed by Grant, and in the entire absence of the angle the functions attributed to the Grant tire seem to be absent. Indeed, the freedom of action permitted by the wire in the rim used by Grant seems to

be denied the tire, for the reason that the rubber is confined by the V-shaped channel.

"The Willoughby patent, No. 18,030, shows wire connection, flaring flanges and angle, (see Figs. 26, 30, 31,) and in mere coincidence of parts seems to be the nearest approach to the Grant tire. But look at these figures, and all possible conception of coincidence of function is dissipated at once. There is the flaring rim, in which is seated a rubber upon which is placed a steel outer tire, through which pass the openings and wires. The angle is far without the upper edges of the rim, and it appears that neither function ascribed to the Grant tire is obtained."

Willoughby patent No. 18,030, has no relevancy whatever. It is true it has flanges upon the rim, flaring and at right angles, and it is illustrated by figures showing what may be called retaining wires, to quote from the brief of counsel, "above the periphery of the flanges, another substantially on a line with the periphery of the flanges, and three of the figures showing the retaining wires substantially below the periphery of the respective flanges." It is manifest that the relation of the retaining wires to the periphery of the flanges is absolutely unimportant in the tire. Willoughby, describing his invention, says: "The object of my present invention is as in my previous one to provide a metallic outer tyre or armour to rubber which is of itself flexible." The retaining wires hold the metallic exterior to the rubber bed.

The utility of the Grant patent, therefore, was not attained in the Willoughby patent. The Rubber Company's conduct is confirmation of this. It uses the Grant tire, as we shall presently see, not the Willoughby tires. Let it be granted that they afforded suggestions to Grant, and that he has gone but one step beyond them. It is conceded, as we have said, that his invention is a narrow one—a step beyond the prior art—built upon it, it may

be, and only an improvement upon it. Its legal evasion may be the easier, (*Railway Co.* v. *Sayles, supra*), and hence we see the strength of the concession to its advance beyond the prior art and of its novelty and utility by the Rubber Company's imitation of it. The prior art was open to the Rubber Company. That "art was crowded," it says, "with numerous prototypes and predecessors" of the Grant tire, and they, it is insisted, possessed all of the qualities which the dreams of experts attributed to the Grant tire. And yet the Rubber Company uses the Grant tire. It gives the tribute of its praise to the prior art; it gives the Grant tire the tribute of its imitation as others have done. And yet the narrowness of the claims seemed to make legal evasion easy. Why, then, was there not evasion by a variation of the details of the patented arrangement? Business interests urged to it as much as to infringement. We can find no answer except that given by the Tire Company: "The patented organization must be one that is essential. Its use in the precise form described and shown in the patent must be inevitably necessary."

That the tire is an invention is fortified by all of the presumptions, the presumption of the patent by that arising from the utility of the tire. And we have said that the utility of a device may be attested by the litigation over it, as litigation "shows and measures the existence of the public demand for its use." *Eames* v. *Andrews, supra.* We have shown the litigation to which the Grant tire has been subjected.

We have taken for granted in our discussion that the Grant tire immediately established and has ever since maintained its supremacy over all other rubber tires and has been commercially successful while they have been failures. The assumption is justified by the concession of counsel. They do not deny the fact, but attribute it to "three subsequent discoveries and conditions" since the

Grant patent, these being—(1) "that the tire can be held in place and fixed upon its base by straining the wires to a clamping point; (2) the production, by mechanical means, cheaply and expeditiously as a commercial product, of the channel rim in straight lengths to be applied to the wheel; and (3) the improvement of the rubber itself; the demand of the public for a solid rubber tire, and the wealth of the complainant, advertising in the market, and pushing and exploiting the tire."

The first ground is a somewhat distant assertion that the tire does not involve invention, but as to that we have sufficiently expressed opinion. The second ground is an inversion of cause and effect, and there is an obvious answer to the third ground. Without suitable rubber, there could have been no rubber tires, and the desire for them necessarily induced their manufacture, and Grant exercised invention to produce an efficient one. We can understand that some advertising was necessary to bring it into notice, and give it a certain use, but the extensive use which it attained, and more certainly the exclusive use which it attained, could only have been the result of its essential excellence, indeed, its pronounced superiority over all other forms. Here, again, in our discussion a comparison is suggested between it and other tires, and the inquiry occurs why capital has selected it to invest in and advertise and not one of the tires of the prior art if it be not better than they? But the effect of advertising is mere speculation; to the utility and use of an article the law assigns a definite presumption of its character, as we have seen, and which we are impelled by the facts of this record to follow.

To what quality the utility of the tire may be due will bear further consideration, if for no other reason than the earnest contentions of counsel. Aside from those contentions and the ability by which they are supported, we might point to what it does as a demonstration of its dif-

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ference from all that preceded it, that there is something in it, attribute or force, which did not exist before—something which is the law of its organization and function, and raises it above a mere aggregation of elements to a patentable combination. And we may say in passing the elements of a combination may be all old. In making a combination the inventor has the whole field of mechanics to draw from. *Leeds & Catlin* v. *Victor Talking Machine Co.*, 213 U. S. at page 318.

The Tire Company gives a definition of the "something" as tipping and reseating power. The Rubber Company earnestly denies the existence of the power, and, as we have seen, the Courts of Appeals for the Sixth and Second Circuits divided in opinion on its existence. We think such power is possessed by the tire. This is shown by the evidence, and was shown at the oral argument. And it is the result of something more than each element acting separately. It is not the result alone of the iron channel with diverging sides, nor alone of the retaining bands or the rubber. They each have uses and perform them to an end different from the effect of either, and they must have been designed to such end, contrived to exactly produce it. There can be no other deduction from their careful relation. The adaptation of the rubber to the flaring channel, the shape of that permitting lateral movement and compression, the retaining band, holding and yielding, placed in such precise adjustment and correlation with the other parts, producing a tire that "when compressed and bent sidewise shall not escape from the channel and shall not be cut on the flange of the channel," and yet shall "be mobile in the channel." We agree with the Court of Appeals that "this was not the result of chance or the haphazard selection of parts; his (Grant's) success could only have been achieved by a careful study of the scientific and mechanical problems necessary to overcome the defects which rendered the then existing tires

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ineffective and useless." This conclusion is not shaken by the testimony and argument urged against it.

The contention of non-infringement is very hesitatingly advanced, suggested rather than urged. It is conceded that infringement existed in the prior litigations, but it is said that if under the closer analysis of the Grant patent "as here presented, and as considered as contended for, if to be confined to exact angles and relations of angles and precise configuration of parts"—the Rubber Company's device does not infringe. And this is attempted to be supported by the testimony of a witness who found, he said, in the Rubber Company's tire "the three fundamental mechanical elements" of the Grant patent in suit which, he interjected, were borrowed by Grant, "both individually and in combination, from the prior art long antedating his alleged invention," and then proceeded to declare a difference between the "angles and relations of angles and precise configuration of parts," to use counsel's language, of the two tires and briefly summarizing his conclusion, said that he did not "find the alleged invention, combinations and devices of either of the claims of the Grant patent in suit embodied in or contained in either of the exhibits introduced in evidence professing to represent the defendant's tire." We are unable to concur in the conclusion. The exhibits demonstrate the contrary. And we are fortified in this by the conduct of the Rubber Company in the Circuit Court. The defense of non-infringement was not there seriously urged. After considering to what extent the case, as presented, differed from the prior litigation, Judge Holt said: "Of course, if your defense was that this defendant does not infringe, that would be an entirely different question, but the only question argued here is as to the validity of the patent." In the opinion of the Court of Appeals non-infringement received no attention, presumably because that defense was not pressed upon it.

The final contention of the Rubber Company is that the Grant patent having been declared invalid by the Circuit Court of Appeals for the Sixth Circuit and by the Circuit Court for the District of Indiana in the Seventh Circuit, the Rubber Company should not have been enjoined from the handling or sale of tires manufactured in the Sixth and Seventh Circuits, and cites *Kessler* v. *Eldred*, 206 U. S. 285.

The Court of Appeals practically reserved the question. It modified the decree of the Circuit Court so far as it prevented the handling, using or selling tires and rims authorized by any judicial decree, recognizing, as it said, the applicability of *Kessler* v. *Eldred*. But it further said:

"Whether it should be given a broader interpretation is a question upon which we express no opinion, deeming it more prudent to wait until the facts are fully developed.

"There is no occasion for attempting at this time to anticipate the future and to provide for a contingency which may not arise. . . . To provide in a decree that the defendant is not enjoined from making, using and selling devices which do not infringe or which have been licensed, seems unnecessary. The doctrine of Eldred and Kessler, if carried to the extent contended for by the defendant, will introduce radical and far-reaching limitations upon the rights of patentees. These questions may not arise in the case at bar, but if they should, the court should have the facts, and all the facts, before attempting to decide them."

We concur in these remarks.

Decree affirmed.

MR. JUSTICE DAY and MR. JUSTICE LURTON took no part in the decision.